

## General

#### Guideline Title

Comprehensive assessment and management of the critically ill. In: Evidence-based geriatric nursing protocols for best practice.

## Bibliographic Source(s)

Balas MC, Casey CM, Happ MB. Comprehensive assessment and management of the critically ill. In: Boltz M, Capezuti E, Fulmer T, Zwicker D, editor(s). Evidence-based geriatric nursing protocols for best practice. 4th ed. New York (NY): Springer Publishing Company; 2012. p. 600-27.

#### **Guideline Status**

This is the current release of the guideline.

This guideline updates a previous version: Balas MC, Casey CM, Happ MB. Comprehensive assessment and management of the critically ill. In: Capezuti E, Zwicker D, Mezey M, Fulmer T, editor(s). Evidence-based geriatric nursing protocols for best practice. 3rd ed. New York (NY): Springer Publishing Company; 2008 Jan. p. 565-93.

## Recommendations

## Major Recommendations

Levels of evidence (I-VI) are defined at the end of the "Major Recommendations" field.

#### Parameters of Assessment

Preadmission

Comprehensive assessment of a critically ill older adult's preadmission health status, cognitive and functional ability, and social support systems helps identify risk factors for cascade iatrogenesis, the development of life-threatening conditions, and frequently encountered geriatric syndromes. Factors that the nurse needs to consider when performing the admission assessment include the following:

Preexisting Cognitive Impairment

Many older adults admitted to intensive care units (ICUs) suffer from high rates of unrecognized, preexisting cognitive impairment (Balas et al., 2007 [Level IV]; Pisani et al., "Underrecognition," 2003 [Level IV]).

Knowledge of preadmission cognitive ability could aid practitioners in:

 Assessing decision-making capacity, informed consent issues, and evaluation of mental status changes throughout hospitalization (Pisani et al., "Screening," 2003 [Level IV])

- Making anesthetic and analgesic choices
- Considering one-to-one care options
- Weaning from mechanical ventilation
- Assessing fall risk
- Planning for discharge from the ICU

Upon admission of an older adult to the ICU, nurses should ask relatives or other caregivers for baseline information about the older adult's:

- Memory, executive function (e.g., fine motor coordination, planning, organization of information), and overall cognitive ability (Kane, Ouslander, & Abrass, 2004 [Level IV])
- Behavior on a typical day; how the patient interacts with others; their responsiveness to stimuli; how able they are to communicate (reading level, writing, and speech); and their memory, orientation, and perceptual patterns prior to their illness (Milisen et al., 2001 [Level IV])
- Medication history to assess for potential withdrawal syndromes (Broyles et al., 2008 [Level IV])

Psychosocial factors: Critical illness can render older adults unable to effectively communicate with the health care team, often related to physiologic instability, technology that leaves them voiceless, and sedative and narcotic use (Happ, 2000 [Level IV]; Happ, 2001 [Level IV]). Family members are therefore often a crucial source for obtaining important preadmission information. Upon ICU admission, nurses need to determine the following:

- What is the older adult's past medical, surgical, and psychiatric history? What medications was the older adult taking before coming to the ICU? Does the older adult regularly use illicit drugs, tobacco, or alcohol? Do they have a history of falls, physical abuse, or confusion?
- What is the older adult's marital status? Who is the patient's significant other? Will this person be the one responsible to make decisions for the older adult if they are unable to do so? Does the older adult have an advanced directive for health care? Is the older adult a primary caregiver to an aging spouse, child, grandchild, or other person?
- How would the older adult describe his or her ethnicity? Do they practice a particular religion or have spiritual needs that should be addressed? What was their quality of life (QOL) like before becoming ill?

Preadmission functional ability and nutritional status: Limited preadmission functional ability and poor nutritional status are associated with many negative outcomes for critically ill older adults (Marik, 2006 [Level VI]; Mick & Ackerman, 2004 [Level VI]; Tullmann & Dracup, 2000 [Level VI]). Therefore, the nurse should assess the following:

- Did the older adult suffer any limitations in the ability to perform their activities of daily living (ADLs) preadmission? If so, what were these limitations?
- Does the older adult use any assistive devices to perform his or her ADLs? If so, what type?
- Where did the patient live prior to admission? Did he or she live alone or with others? What was the older adult's physical environment like (house, apartment, stairs, multiple levels, etc.)?
- What was the older adult's nutritional status like preadmission? Does he or she have enough money to buy food? Does he or she need assistance with making meals and obtaining food? Does he or she have any particular food restrictions or preferences? Was he or she using supplements and vitamins on a regular basis? Does he or she have any signs of malnutrition, including recent weight loss or gain, muscle wasting, hair loss, or skin breakdown?

#### During ICU Stay

There are many anatomic and physiologic changes that occur with aging (see Table 30.1 in the original guideline document). The interaction of these changes with the acute pathology of a critical illness, comorbidities, and the ICU environment leads not only to atypical presentation of some of the most commonly encountered ICU diagnoses, but may also elevate the older adult's risk for complications. The older adult must be systematically assessed for the following:

#### Comorbidities and Common ICU Diagnoses

- Respiratory: chronic obstructive pulmonary disease, pneumonia, acute respiratory failure, adult respiratory distress syndrome, rib fractures/flail chest
- Cardiovascular: acute myocardial infarction, coronary artery disease, peripheral vascular disease, hypertension, coronary artery bypass grafting, valve replacements, abdominal aortic aneurysm, dysrhythmias
- Neurologic: cerebral vascular accident, dementia, aneurysms, Alzheimer's disease, Parkinson's disease, closed head injury, transient ischemic attacks
- Gastrointestinal (GI): biliary tract disease, peptic ulcer disease, GI cancers, liver failure, inflammatory bowel disease, pancreatitis, diarrhea, constipation, and aspiration

- Genitourinary (GU): renal cell cancer, chronic renal failure, acute renal failure, urosepsis, and incontinence
- Immune/hematopoietic: sepsis, anemia, neutropenia, and thrombocytopenia
- Skin: necrotizing fasciitis, pressure ulcers

#### Acute Pathology

Thoracic or abdominal surgery, hypovolemia, hypervolemia, hypothermia/hyperthermia, electrolyte abnormalities, hypoxia, arrhythmias, infection, hypotension/hypertension, delirium, ischemia, bowel obstruction, ileus, blood loss, sepsis, disrupted skin integrity, multisystem organ failure

#### ICU/Environmental Factors

Deconditioning, poor oral hygiene, sleep deprivation, pain, immobility, nutritional status, mechanical ventilation, hemodynamic monitoring devices, polypharmacy, high-risk medications (e.g., narcotics, sedatives, hypnotics, nephrotoxins, vasopressors), lack of assistive devices (e.g., glasses, hearing aids, dentures), noise, tubes that bypass the oropharyngeal airway, poorly regulated glucose control, Foley catheter use, stress, invasive procedures, shear/friction, intravenous (IV) catheters

#### Atypical Presentation

Commonly seen in older adults experiencing the following: myocardial infarction, acute abdomen, infection, and hypoxia

#### Nursing Care Strategies

#### Preadmission

Based on their preadmission assessment findings, nurses should consider the following:

- Obtaining appropriate consults (i.e., nutrition, physical/occupational/speech therapist)
- Implementing safety precautions
- Using pressure-relieving devices
- · Organizing family meetings
- Providing the older adult with a consistent primary nurse

#### During ICU

Nursing interventions that may benefit:

#### Multiple Organ Systems

- Encouraging early, frequent mobilization/ambulation
- Providing proper oral hygiene
- Ensuring adequate pain control
- Reviewing/assessing medication appropriateness
- Avoiding polypharmacy/high-risk medications (see Table 30.2 in the original guideline document)
- Securing and ensuring the proper functioning of tubes/catheters
- Actively taking measures to maintain normothermia
- Closely monitoring fluid volume status

#### Respiratory

- Encourage and assist with coughing, deep breathing, incentive spirometer use; use alternative device when appropriate (e.g., positive expiratory pressure [PEP]).
- · Assess for signs of swallowing dysfunction and aspiration.
- Closely monitor pulse oximetry and arterial blood gas results.
- Consider the use of specialty beds.
- Advocate for early weaning trials and extubation as soon as possible.
- Exercise standard ventilator-associated pneumonia (VAP) precautions (American Association of Critical Care Nurses, 2004 [Level I]; American Thoracic Society & Infectious Diseases Society of America, 2005 [Level I]; Dezfulian et al., 2005 [Level I]; Institute for Healthcare Improvement & 5 Million Lives Campaign, 2008 [Level VI]; Krein et al., 2008 [Level IV]):
  - Keep the head of the bed elevated to more than 30 degrees.
  - Provide frequent oral care.

- Maintain adequate cuff pressures.
- Use continuous subglottic suctioning devices.
- Do not routinely change ventilator circuit tubing.
- Assess the need for stress ulcer and deep venous thrombosis (DVT) prophylaxis.
- Turn the patient as tolerated.
- Maintain general hygiene practices.

#### Cardiovascular

- Carefully monitor the older adult's hemodynamic and electrolyte status.
- Closely monitor the older adult's electrocardiogram (ECG) with an awareness of many conduction abnormalities seen in aging. Consult with physician regarding prophylaxis when appropriate.
- Advocate for the removal of invasive devices as soon as the patient's condition warrants. The least restrictive device may include long-term
  access.
- Recognize that both preexisting pulmonary disease and manipulations of the abdominal and thoracic cavities may lead to unreliability of
  traditional values associated with central venous pressures (CVPs) and pulmonary artery occlusion pressures (PAOPs) (Rosenthal & Kavic,
  2004 [Level VI]).
- Because of age-related changes to the cardiovascular system, the nurse should acknowledge (Rosenthal & Kavic, 2004 [Level VI]):
  - Older adults often require higher filling pressures (i.e., CVPs in the 8 to 10 cm range, PAOPs in the 14 to 18 cm range) to maintain adequate stroke volume and may be especially sensitive to hypovolemia.
  - Overhydration of the older adult should also be avoided because it can lead to systolic failure, poor organ perfusion, and hypoxemia
    with subsequent diastolic dysfunction.
  - Certain drugs commonly used in the ICU setting may prove to be either not as effective (e.g., isoproterenol and dobutamine) or more effective (e.g., afterload reducers).

#### Neurologic/Pain

- Closely monitor the older adult's neurologic and mental status.
- Screen for delirium and sedation level at least once per shift.
- Implement the following interventions to reduce delirium:
  - Promote sleep, mobilize as early as possible, review medications that can lead to delirium, treat dehydration, reduce noise or provide
    "white noise," close doors/drapes to allow privacy, provide comfortable room temperature, encourage family and friends to visit,
    allow the older adult to assume their preferred sleeping positions, discontinue any unnecessary lines or tubes, and avoid the use of
    physical restraints, using least restraint for minimum time only when absolutely necessary.
  - Maximize the older adult's ability to communicate his or her needs effectively and interpret their environment.
    - Promote the older adult wearing glasses, hearing aids, and other appropriate assistive devices.
    - Face the patients when speaking to them, get their attention before talking, speak clearly and loud enough for them to understand, allow them enough time (pause time) to respond to questions, provide them with a consistent provider (i.e., a primary nurse), use visual clues to remind them of the date and time, and provide written or visual input for a message (Garrett et al., 2007 [Level IV]).
    - Provide the older adult with alternate means of communication (e.g., providing him or her with a pen and paper, using
      nonverbal gestures, and/or using specially designed boards with alphabet letters, words, or pictures) (Garrett et al., 2007
      [Level IV]; Happ et al., 2010 [Level III]).
    - Provide translators/interpreters as needed.
- Provide adequate pain control while avoiding oversedation or undersedation. For a full discussion, see the National Guideline Clearinghouse (NGC) summary of the Hartford Institute for Geriatric Nursing guideline Pain management in older adults.

#### Gastrointestinal

- Monitor for signs of GI bleeding and delayed gastric emptying and motility.
  - Encourage adequate hydration, assess for signs of fecal impaction, and implement a bowel regimen.
  - Avoid use of rectal tubes.
- Advocate for stress ulcer prophylaxis.
- Provide dentures as soon as possible.
- Implement aspiration precautions.
  - Keep the head of the bed elevated to a high Fowler's position, frequently suction copious oral secretions, bedside evaluate

swallowing ability by a speech therapist, assess phonation and gag reflex, monitor for tachypnea.

- Advocate for early enteral/parental nutrition.
- Ensure tight glucose control.

#### Genitourinary

- Assess any GU tubes to ensure patency and adequate urinary output. If the older adult should experience an acute decrease in urinary output, consider using bladder scanner (if available), rather than automatic straight catheterization, to check for distension.
- Advocate for early removal of Foley catheters. Use other less invasive devices/methods to facilitate urine collection (i.e., external or condom catheters, offering the bedpan on a scheduled basis, and keeping the nurse's call bell/signal within the older adult's reach).
- Monitor blood levels of nephrotoxic medications as ordered.

#### Immune/Hematopoietic

- Ensure the older adult is ordered appropriate DVT prophylaxis (i.e., heparin, sequential compression devices).
- Monitor laboratory results, assess for signs of anemia relative to patient's baseline.
- Recognize early signs of infection—restlessness, agitation, delirium, hypotension, tachycardia—because older adults are less likely to develop
  fever as a first response to infection.
- Meticulously maintain infection control/prevention protocols.

#### Skin

- Conduct thorough skin assessment.
- Vigilantly monitor room temperature, make every effort to prevent heat loss, and carefully use and monitor rewarming devices.
- Use methods known to reduce the friction and shear that often occur with repositioning in bed.
- In severely compromised patients, the use of specialty beds may be appropriate.
- Techniques such as frequent turning, pressure-relieving devices, early nutritional support, as well as frequent ambulation may not only
  protect an older adult's skin but also promote the health of their cardiovascular, respiratory, and GI systems.
- Closely monitor IV sites, frequently check for infiltrations and use of nonrestrictive dressings and paper tape.

#### Definitions:

Levels of Evidence

Level I: Systematic reviews (integrative/meta-analyses/clinical practice guidelines based on systematic reviews)

Level II: Single experimental study (randomized controlled trials [RCTs])

Level III: Quasi-experimental studies

Level IV: Non-experimental studies

Level V: Care report/program evaluation/narrative literature reviews

Level VI: Opinions of respected authorities/consensus panels

AGREE Next Steps Consortium (2009). Appraisal of guidelines for research & evaluation II. Retrieved from http://www.agreetrust.org/?o=1397

Adapted from Melnyck, B. M. & Fineout-Overholt, E. (2005). Evidence-based practice in nursing & health care: A guide to best practice. Philadelphia, PA: Lippincott Williams & Wilkins and Stetler, C.B., Morsi, D., Rucki, S., Broughton, S., Corrigan, B., Fitzgerald, J., et al. (1998). Utilization-focused integrative reviews in a nursing service. Applied Nursing Research, 11(4) 195-206.

## Clinical Algorithm(s)

None provided

## Scope

## Disease/Condition(s)

Serious or life-threatening illness requiring admission to a critical-care unit

# Guideline Category

Evaluation

Management

Risk Assessment

Screening

## Clinical Specialty

Critical Care

Family Practice

Geriatrics

Nursing

### **Intended Users**

Advanced Practice Nurses

Allied Health Personnel

Health Care Providers

Hospitals

Nurses

Physician Assistants

Physicians

## Guideline Objective(s)

To provide a standard of practice protocol to restore physiologic stability, prevent complications, maintain comfort and safety, and preserve preillness functional ability and quality of life (QOL) in older adults admitted to critical-care units

## **Target Population**

Critically ill older adults

## Interventions and Practices Considered

Assessment/Evaluation

- 1. Comprehensive preadmission assessment: health status, cognitive and functional ability, and social support systems
- 2. Assessment during intensive care unit (ICU) stay
  - Comorbidities/common ICU diagnoses
  - Acute pathology

- ICU/environmental factors
- Atypical presentation

#### Management

- 1. During preadmission period
  - Obtaining appropriate consults
  - Safety precautions
  - Use of pressure-relieving devices
  - Family meetings
- 2. During ICU stay, interventions that may benefit:
  - Multiple organ systems
  - · Respiratory system
  - Cardiovascular system
  - Neurologic/pain
  - Gastrointestinal system
  - · Genitourinary system
  - Immune/hematopoietic system
  - Skin

## Major Outcomes Considered

- · Hemodynamic stability
- Complications
- Functional status
- Pain
- Quality of life (QOL)
- Intensive care unit (ICU) utilization rate
- Mortality rate

## Methodology

### Methods Used to Collect/Select the Evidence

Hand-searches of Published Literature (Primary Sources)

Hand-searches of Published Literature (Secondary Sources)

Searches of Electronic Databases

## Description of Methods Used to Collect/Select the Evidence

Although the Appraisal of Guidelines for Research and Evaluation (AGREE) instrument (described in Chapter 1 of the original guideline document, Evidence-based Geriatric Nursing Protocols for Best Practice, 4th ed.) was created to critically appraise clinical practice guidelines, the process and criteria can also be applied to the development and evaluation of clinical practice protocols. Thus, the AGREE instrument has been expanded (i.e., AGREE II) for that purpose to standardize the creation and revision of the geriatric nursing practice guidelines.

The Search for Evidence Process

Locating the best evidence in the published research is dependent on framing a focused, searchable clinical question. The PICO format—an acronym for population, intervention (or occurrence or risk factor), comparison (or control), and outcome—can frame an effective literature search. The editors enlisted the assistance of the New York University Health Sciences librarian to ensure a standardized and efficient approach to collecting evidence on clinical topics. A literature search was conducted to find the best available evidence for each clinical question addressed.

The results were rated for level of evidence and sent to the respective chapter author(s) to provide possible substantiation for the nursing practice protocol being developed.

In addition to rating each literature citation as to its level of evidence, each citation was given a general classification, coded as "Risks,"
"Assessment," "Prevention," "Management," "Evaluation/Follow-up," or "Comprehensive." The citations were organized in a searchable database for later retrieval and output to chapter authors. All authors had to review the evidence and decide on its quality and relevance for inclusion in their chapter or protocol. They had the option, of course, to reject or not use the evidence provided as a result of the search or to dispute the applied level of evidence.

Developing a Search Strategy

Development of a search strategy to capture best evidence begins with database selection and translation of search terms into the controlled vocabulary of the database, if possible. In descending order of importance, the three major databases for finding the best primary evidence for most clinical nursing questions are the Cochrane Database of Systematic Reviews, Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Medline or PubMed. In addition, the PsycINFO database was used to ensure capture of relevant evidence in the psychology and behavioral sciences literature for many of the topics. Synthesis sources such as UpToDate® and British Medical Journal (BMJ) Clinical Evidence and abstract journals such as *Evidence Based Nursing* supplemented the initial searches. Searching of other specialty databases may have to be warranted depending on the clinical question.

It bears noting that the database architecture can be exploited to limit the search to articles tagged with the publication type "meta-analysis" in Medline or "systematic review" in CINAHL. Filtering by standard age groups such as "65 and over" is another standard categorical limit for narrowing for relevance. A literature search retrieves the initial citations that begin to provide evidence. Appraisal of the initial literature retrieved may lead the searcher to other cited articles, triggering new ideas for expanding or narrowing the literature search with related descriptors or terms in the article abstract.

#### Number of Source Documents

Not stated

## Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

## Rating Scheme for the Strength of the Evidence

Levels of Evidence

Level I: Systematic reviews (integrative/meta-analyses/clinical practice guidelines based on systematic reviews)

Level II: Single experimental study (randomized controlled trials [RCTs])

Level III: Quasi-experimental studies

Level IV: Non-experimental studies

Level V: Care report/program evaluation/narrative literature reviews

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## Methods Used to Analyze the Evidence

Review of Published Meta-Analyses

## Description of the Methods Used to Analyze the Evidence

Not stated

#### Methods Used to Formulate the Recommendations

**Expert Consensus** 

## Description of Methods Used to Formulate the Recommendations

Not stated

## Rating Scheme for the Strength of the Recommendations

Not applicable

## Cost Analysis

A formal cost analysis was not performed and published cost analyses were not reviewed.

## Method of Guideline Validation

External Peer Review

Internal Peer Review

## Description of Method of Guideline Validation

Not stated

# Evidence Supporting the Recommendations

## References Supporting the Recommendations

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## Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for selected recommendations (see the "Major Recommendations" field).

# Benefits/Harms of Implementing the Guideline Recommendations

#### Potential Benefits

#### Patient

- Restoration of hemodynamic stability
- Avoidance/minimization of complications
- Maintenance/optimization of preadmission functional ability
- Minimization of pain/anxiety
- Improvement of communication with the health care team

#### Provider

- Employing consistent and accurate documentation of assessment relevant to the older intensive care unit (ICU) patient
- Provision of consistent, accurate, and timely care in response to deviations identified through ongoing monitoring and assessment of the older ICU patient
- Provision of patient/caregiver with information and teaching related to his or her illness and regarding transfer of care and/or discharge

Institution (Includes quality assurance/quality assessment)

- Evaluation of staff competence in the assessment of older critically ill patients
- · Utilization of unit-specific, hospital-specific, and national standards of care to evaluate existing practice
- Identification of areas for improvement and work collaboratively across disciplines to develop strategies for improving critical care to older adults

#### **Potential Harms**

Not stated

# Implementation of the Guideline

## Description of Implementation Strategy

An implementation strategy was not provided.

## Implementation Tools

Mobile Device Resources

For information about availability, see the Availability of Companion Documents and Patient Resources fields below.

# Institute of Medicine (IOM) National Healthcare Quality Report Categories

## IOM Care Need

Getting Better

#### **IOM Domain**

Effectiveness

Patient-centeredness

# Identifying Information and Availability

## Bibliographic Source(s)

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## Adaptation

Not applicable: The guideline was not adapted from another source.

#### Date Released

2008 (revised 2012)

## Guideline Developer(s)

Hartford Institute for Geriatric Nursing - Academic Institution

## Guideline Developer Comment

The guidelines were developed by a group of nursing experts from across the country as part of the Nurses Improving Care for Health System Elders (NICHE) project, under sponsorship of the Hartford Institute for Geriatric Nursing, New York University College of Nursing.

## Source(s) of Funding

Hartford Institute for Geriatric Nursing

#### Guideline Committee

Not stated

## Composition of Group That Authored the Guideline

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#### Financial Disclosures/Conflicts of Interest

Not stated

#### **Guideline Status**

This is the current release of the guideline.

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# Guideline Availability

Electronic copies: Available from the Hartford Institute for Geriatric Nursing Web site	
Copies of the book Evidence-Based Geriatric Nursing Protocols for Best Practice, 4th edition: Available from Springer Publishing Compar	ny,
536 Broadway, New York, NY 10012; Phone: (212) 431-4370; Fax: (212) 941-7842; Web: www.springerpub.com	

## Availability of Companion Documents

The ConsultGeriRN app for mobile devices is available through the Hartford Institute for Geriatric Nursing Web site

### Patient Resources

None available

### **NGC Status**

This NGC summary was completed by ECRI Institute on June 16, 2008. The information was verified by the guideline developer on August 4, 2008. This summary was updated by ECRI Institute on July 27, 2010 following the FDA drug safety communication on Heparin. This NGC summary was updated by ECRI Institute on June 24, 2013. The updated information was verified by the guideline developer on August 6, 2013. This summary was updated by ECRI Institute on March 10, 2014 following the U.S. Food and Drug Administration advisory on Low Molecular Weight Heparins.

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